www.simaudio.com

Evolution Series
700i Integrated Amplifier

MOON

Power Emotion Soul

The **MOON 700i** is the ultimate Integrated Amplifier. Intended to meet the needs of the most demanding music connoisseurs, it is fully differential dual-mono design, rated at 175 watts/channel into 8 ohms (350 wats into 4 ohms), offering authority, finesse and superb control. Using a variety of new technologies developed since the introduction of the Evolution Series, the **MOON 700i** provides more sonic transparency and accuracy than previously thought possible.

Setting a new standard for Integrated Amplifiers !

New technologies include (i) the **M-eVOL2** volume control, with a phenomenal 530 steps, allowing for an extremely precise level adjustment just like the MOON P-8 Preamplifier; (ii) New **MOON output transistors**, specifically designed for use in our amplifiers, provide tighter and more visceral bass performance, as well as unprecedented linearity thoughout the entire frequency spectrum; (iii) An input stage circuit which reduces noise, preserving image focus and integrity like never before.

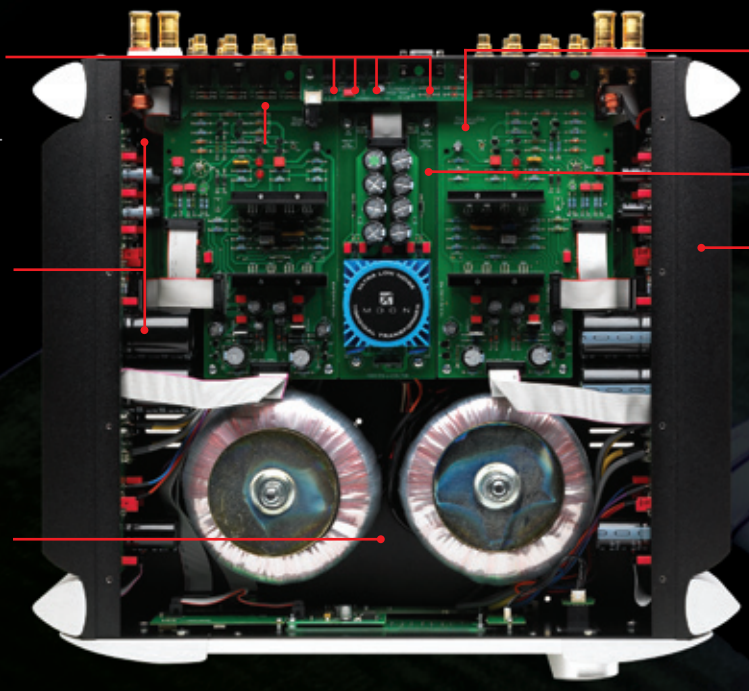
Significant Design Features

RS-232 port for (i) full unsolicited bidirectional feedback and (ii) firmware updates; IR input for external control; 12V trigger for remote operation; **SimLink** controller port allows for 2-way communications between other compatible **MOON** components

Lynx circuitry which is a "no overall feedback" design resulting in genuine real-time amplification, a more accurate musical reproduction with respect to tonality, virtually non-existent inter-modulation distortion and the elimination of common phase errors resulting from feedback

An massive dual-mono power supply using custom proprietary toroidal transformers for the amplifier section

- **M-eVOL2** volume control circuit using MDAC's (operating in a current steering R-2R configuration) which alter the audio signal's amplitude yielding no sonic degradation of the signal, regard less of the selected volume setting; A total 530 individual volume steps in 1dB and 0.1dB increments



Four-layer PCB tracings resulting in a much shorter signal path and dramatically improved signal-to-noise ratio

A separate power supply for the preamplifier circuit

Ultra rigid chassis construction to minimize the effects of external vibrations

- The preamplifier section is mounted on its own dedicated circuit board (located below the main board) resulting in lower crosstalk
- For each line input: **M-Lock** for "user selectable" maximum volume setting lock-out and "Gain offset" with a ±10dB range; can be configured to be "home-theater ready", where the gain section of the 700i is bypassed
- Proprietary MOON **Bi-Polar output transistors** with unprecedented signal linearity and ultra-low noise characteristics
- "Class A" output to 5 watts for greater efficiency
- Fully balanced differential circuitry in a dual-mono design

There is a warmth and naturalness to the soundstage that must be heard to be believed.

Simaudio Ltd. has been designing and manufacturing innovative, leading-edge audio and video products since 1980. **MOON** products have been globally recognized for their world-class performance, garnering numerous accolades for this outstanding achievement. Our products are engineered and built in Canada, utilizing advanced, efficient, "green" assembly techniques with strict quality control. Furthermore, our manufacturing processes are part of our philosophy, whereas the high quality and long-life of MOON products are the best way to preserve our environment, avoiding premature obsolesence. MOON products meet or exceed all international requirements for safety, performance and durability. At Simaudio, great music matters. However, great music for a lifetime matters most.

The transistors used in the **MOON 700i's** output stage perform what can be best described as electrical gain of the music signal. Higher quality transistors will yield an amplified signal with greater integrity. In addition, since each channel of an output stage uses numerous transistors, they must all be accurately matched to each other to maintain this integrity.

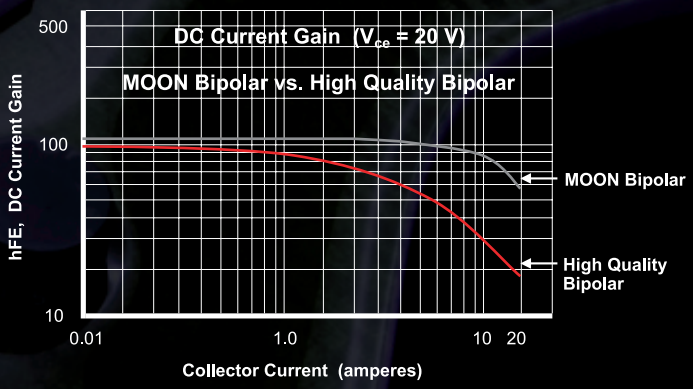
MOON amplifiers have always used bipolar transistors in their output stages for several significant reasons. When compared to other types of amplification transistors, bipolars offer:

- Wider bandwidth
- Lower distortion
- Excellent reliability and a longer life span
- High Efficiency
- High resistance to ESD (electrostatic discharge)

We have managed, at a great expense, to have bipolar transistors manufactured to our own exceedingly high standards and specific requirements. When compared to more readily available high quality bipolars for use in audio amplifiers, **MOON Bipolars** offer the following advantages:

- Unprecedented gain linearity
- A green component containing no lead
- Lower noise floor
- Even wider bandwidth
- Improved bass response
- Greater signal integrity
- Even greater reliability at higher output levels
- A more consistent hFE (the DC current gain of a transistor) which allows for more accurate and easier matching of multiple Bipolars.

The exceptional gain linearity of **MOON Bipolars** is very significant in the sense that it results in many of these aforementioned advantages. To illustrate the significant effect of this gain linearity when compared to a quality bipolar transistor found in a high-performance audio amplifier, refer to figure 1 below which shows the difference in DC current gain as a function of the transistor's output current:



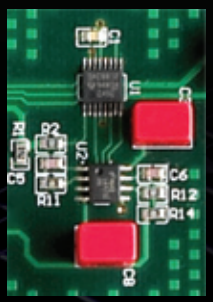
Optimal sonic performance is always achieved regardless of the amplifier's output level.

Technical information

The **M-eVOL2** volume circuit uses Multiplying Digital-to-Analog Converters (MDAC's) to vary the amplitude of the music signal based on the chosen volume setting. Since it is used in a dual-mono circuit topology, there is one MDAC for each channel. As well, the audio signal ALWAYS remains in the analog domain and is never degraded at any volume setting.

Each MDAC (TI DAC8812) uses a pair of current steering R2-R ladder DACs that allows for operation in a fully balanced differential mode. Like the M-Ray volume circuit found in our MOON P-8 reference level preamplifier, it provides incremental adjustments in 0.1dB steps, yielding a total of 530 unique volume steps.

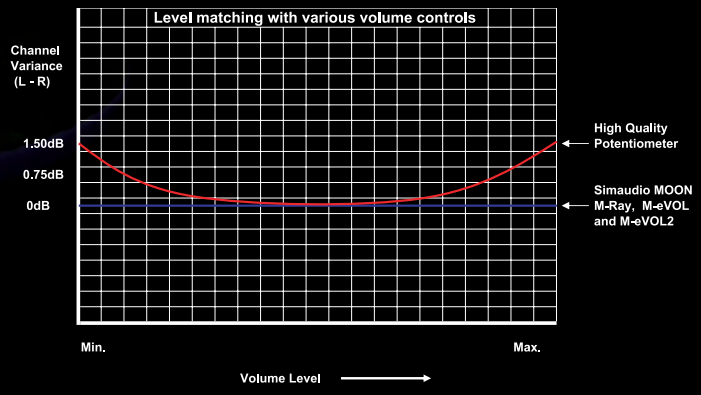
Introduced in the **MOON 700i** Integrated Amplifier, the benefits of the **M-eVOL2** volume circuit, when compared to the original **M-eVOL**, include:



- A blacker background
- An improvement in signal-to-noise-ratio of +10dB in magnitude
- Improved signal matching between the left and right channels
- Much more precise incremental volume adjustments (0.1 db vs. 0.5dB)
- Increased bandwidth
- Closely approaches the performance of the **M-Ray** volume circuit

The M-eVOL2 proprietary volume control circuit yield virtually perfect signal level matching between the left and right channels as well as staggeringly low crosstalk levels.

All volume control circuits suffer from imperfect level matching between the left and right channels, especially at low and high output levels. In simple terms this means that the actual volume level is not identical for both channels at various settings:



A very high quality volume circuit using a potentiometer will typically have a variance of as much as 1.5dB (red) between the left and right channels at the volume extremities as shown in figure 6. All three of our volume circuits, **M-Ray**, **M-eVOL** and **M-eVOL2** maintain an extremely low and consistent variance of less than 0.05dB (blue) across the entire volume range.

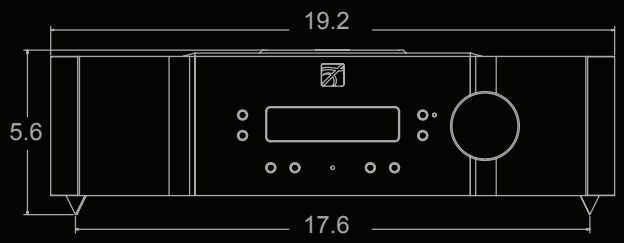
Perfect level matching between channels that no other volume control can achieve ... Recorded music heard as it was intended to be: pure, natural and uncolored.

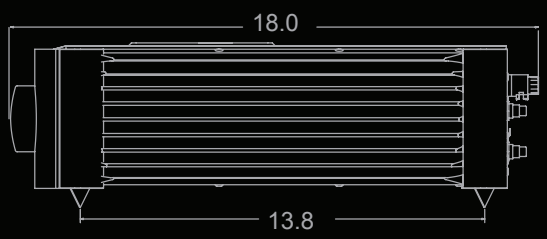
Moon 700i Specifications

Configuration	Fully balanced, dual-mono
Power Supply Transformers	2 x 0.5kVA
Power Supply Capacitance	68,800µF
Circuit Topology	Open Loop
Balanced inputs (XLR)	1 pair
Single-ended inputs (RCA)	4 pairs
Monitor Loop (RCA)	1 pair (inputs & outputs)
Input Impedance	23,700Ω
Input Sensitivity	490mV – 6.0V RMS
Preamplifier line-level output (RCA)	1 pair @ 50Ω
Output Device Type - Amplifier	Proprietary MOON BiPolars - 6 per channel
Output Binding Posts	Gold-plated WBT
Output Power @ 8Ω	175 Watts per channel
Output Power @ 4Ω	350 Watts per channel
Output Impedance	0.02Ω
Damping Factor	> 400
Volume Steps	0.5dB from 0-30 and 0.1dB from 30-80

Gain Control	M-eVOL2
Gain	37dB
Signal-to-noise Ratio (Preamplifier / Amplifier)	120dB (20-20kHz) / 105dB @ full power
Maximum Output Voltage	45 Volts
Slew Rate	35V/µs
Maximum Current - Peak / Continuous	42 amperes / 22 amperes
Frequency Response	10Hz - 100kHz +0/-0.1dB
Crosstalk @ 1kHz	-100dB
Intermodulation Distortion	Unmeasureable
THD (20Hz - 20kHz)	< 0.015% @ 1 watt / < 0.04% @ 175 watts
Remote Control	All Aluminum Full-Function
Display Type	8 character dot matrix LED
Power Consumption @ idle	50 Watts
AC Power Requirements	120V / 60Hz or 240V / 50Hz
Shipping Weight	60 lbs / 27 Kgs
Dimensions (W x H x D, inches)	19.2 x 5.6 x 18.0

Specifications subject to change without notice





MANUFACTURED IN CANADA

Distributed by:

MOON

Simaudio Ltd.: 95 Chemin du Tremblay, Unit 3, Boucherville, Quebec CANADA J4B 7K4
Simaudio Ltd.: 2002 Ridge Road, Champlain, NY 12919 NY USA

(877) 980-2400 (450) 449-9947 info@simaudio.com www.simaudio.com

LITHO CANADA